Enterprise Service Management between IT Organization and IT Architecture Thinking – A Clarifying Literature Review

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Abstract

Given the dispersed nature of the term Enterprise Service Management (ESM) across different research fields and the heterogeneous understanding of ESM even within single fields, the purpose of this literature review is to sharpen concept clarity of ESM for future research. We address the research question on how we can synthesize existing knowledge on ESM and clarify the term. Our systematic literature review finds that ESM appears mainly in two research fields: the customer and process-centric ESM related to the IT organization thinking and system-centric ESM related to IT architecture thinking. Our contribution is a unifying definition of ESM: ESM is an approach that aims at transforming and managing organizational workflows as services, which can be used by internal or external customers to fulfill business or IT requests. ESM is created as an interplay of an open yet interconnected enterprise organization, a component-based architecture of services, and support of technology independent standardization tools.

Keywords

Enterprise Service Management, IT Service Management, IT Organization, IT Architecture, Structured Literature Review

1. Introduction

"A common language is an essential prerequisite for a community of scholars interested in the same or similar phenomena to exchange ideas and build knowledge" is Suddaby's plea for construct clarity [35, p.352]. The phenomenon of Enterprise Service Management (ESM), however, misses this clarity. The term ESM is just in the process of concept formation and not universally defined [10, 17, 29]. Some view ESM as an extension of IT Service Management (ITSM) towards business processes, while others use the term ESM in architecture frameworks such as System Wide Information Management (SWIM). Yet, in most papers the distinction between ITSM and ESM is blurry, and the terms are used synonymously [9,13, 43]. At the same time, the relevance of ESM is increasing due to the success of IT solutions provided by a growing number of service management vendors such as ServiceNow [23, 25]. With the diversity of meanings around ESM across research fields, we want to contribute to concept clarity, which should benefit the scientific and professional community in future ESM research.

The purpose of this literature review is to provide an overview of the current academic knowledge by clarifying the ESM concept. We follow Suddaby's [35] idea of construct clarity which consists of four elements: a precise definition, contextual scope conditions, a semantic relationship with other constructs, and logical consistency of the construct. We address the research question how we can synthesize existing knowledge on ESM and clarify the term through a systematic literature review on ESM. To the best of our knowledge, there has not been a literature review on ESM. A brief mention of ESM can be found in the review by Pröhl and Zarnekow [32], who analyzed ITSM contributions in the time from 2003 to 2018 and clustered them according to topics and popularity. One of the identified topics was ESM with 18 papers, which showed that while empirical research on ESM has only recently gained momentum, conceptually focused work on ESM has hardly been published (only 1 out of 18

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articles). Pröhl and Zarnekow [32] conclude that ESM is a very current topic with increasing contributions to be expected in near future.

Our literature review reveals that the term ESM has mainly been used in two schools of thought in Information Systems (IS): the customer and process-centric ESM related to IT organization thinking, and the system-centric ESM related to IT architecture thinking. Our contribution is that we provide a unifying definition of ESM, which is applicable across research fields. We argue that our definition fits the service science logic, where services are repeatable business activities in a three-layered service-oriented organization [3]. In the remainder of this paper, we first explain the literature review approach, followed by the findings section, which is subdivided into a general trends part and a detailed concept characteristics part. We conclude with a discussion and an outlook.

2. Research Approach

Literature reviews are essential in building theoretical foundations for the whole discipline as well as defining further research fields [6, 39]. This literature review follows the recommendations by Bandara [2], Webster and Watson [39] and Paré et al. [31], supported by insights from vom Brocke et al. [6] and Levy and Ellis [26]. As this paper analyses an under-researched term (ESM), it can be classified as tackling "an emerging issue that would benefit from exposure to potential theoretical foundations" [39, p. xiv]. Hence, this paper is categorized as a descriptive literature review type, which seeks to establish interpretable patterns within the current body of knowledge [31]. The approach in this review is inductive, with the outcome being a categorization of the research derived from the literature analysis itself (Table 3) and a unifying definition.

2.1. Scope and search

The literature search was conducted between November 2021 and January 2022. The single search phrase used was "Enterprise Service Management", which was put in quotation marks to find exact matches. Based on listings by Levy and Ellis [26] and Bandara [2], we searched in 8 scientific databases: ABI/INFORM, ACM Digital Library, AISeL, EBSCOhost, IEEE, ProQuest, Web of Science and Wiley Online Library. As the first search showed a limited number of hits, we decided to expand our search in two ways. First, we enlarged the source pool by searching the same phrase via the search engine Google Scholar, which is particularly recommended to research concepts in a broader context beyond a single field [2]. Second, we included other document types than peer-reviewed journal articles or conference papers such as non-peer-reviewed conference papers, specialized books or chapters, analytical reports, and manuals, which is a legitimate strategy to complement academic knowledge [2].

The search process was organized in four phases (see Figure 1). The 1st phase focused on journal articles, conference papers and specialized books in academic databases only. In the 2nd phase we used the search engine Google Scholar and expanded the document types to also include practitioner's research reports and manuals. In the 3rd phase a backward and forward search was conducted. Lastly, in the 4th phase we scanned documents from the previous phases and added a number of peripherally related papers, where ESM was only mentioned as a sidenote. To determine which documents to include in the literature review and in which phase, a scanning of the paper's title, abstract, and a text keyword search were conducted.

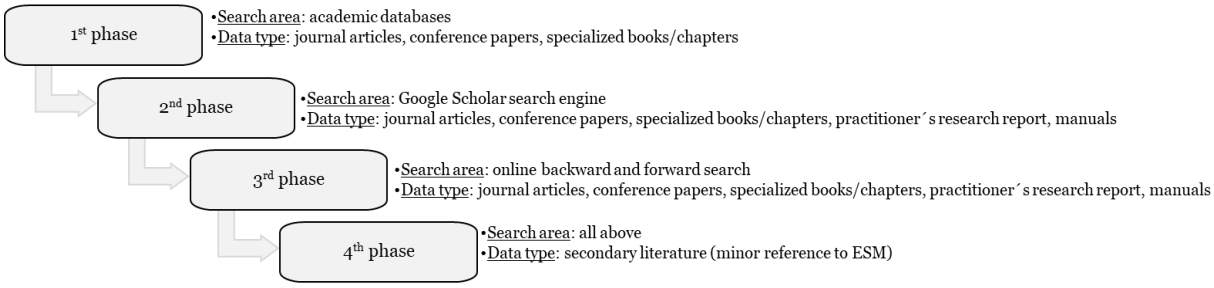

Figure 1: Literature search process divided in four phases [author's illustration]

The criteria for inclusion or exclusion (Table 1) were based on language, source, and data type considerations. Although the range of formats was quite broad, remaining documents as listed in the exclusion list were out of scope due to their limited verifiable quality. With each search phase, the relevancy of findings diminished, converging in the 4th phase, where documents with even a one-time mention of the phrase "Enterprise Service Management" were included. We are thus confident that additional papers would not have added considerable value and consider the review as saturated [6].

Table 1

Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Language English or German	Other languages than English or German
Sources as in Figure 1	Documents that did not once contain the keyword in the whole text
Data types as in Figure 1	Data formats: dissertations, study work, technical reports, project deliverables, blog posts, news article
Deals with ESM	Duplicates

2.2. Literature search results

With the above search criteria, 63 papers were found in total (Table 2). Their publication dates range from 1999 to 2021. The vast majority of papers stem from Google Scholar (39), followed equally by academic databases (12) and online findings (12). The hits per phase were as follows: 1st phase (7), 2nd phase (20), 3rd phase (10), and 4th phase (26). In terms of the type of collected material, the majority were conference papers (25) and journal articles (19), followed by specialized books or chapters (13) and manuals (3) as well as research reports (3). Low numbers of keyword-based hits in academic databases and higher numbers of hits in Google Scholar indicate that the ESM topic has not yet fully reached the scientific domain. The few hits in the 1st phase show that most high quality IS journals have not been discussing ESM, so far. Since one third of the document types were specialized books, research reports, or manuals, and many authors had company affiliations, the ESM topic seems to be driven by practice. We classified around 30% of documents as focusing mainly on ESM, in all other papers (70%) it was discussed either briefly or mentioned on a side note.

To analyze the used methodologies, we followed Iden and Eikebrokk's [20] approach, which was based on Orlikowski and Baroundi's (1991) categorization scheme. Two main groups, each with several sub-groups, were formulated and determined per paper: Conceptual (sub-groups: concepts, models, frameworks, literature reviews) and empirical (sub-groups: survey, interviews, case studies, experiments, and multi-methods). Over 50% of findings were categorized as empirical case studies (mainly qualitative, 5 quantitative). In general, 45 papers were empirical while 18 were conceptual in nature. The latter included only qualitative work, except for one multi-method literature review. Table 2 summarizes the literature search results.

Table 2

Literature search results

Database	1st phase	2nd phase	3rd phase	4th phase	Total included	Overall duplicates
ABI/INFORM	0/0	~	~	~	0	(0)
ACM Digital	1/2	~	~	~	1	(1)
AISeL	0/4	~	~	~	0	(0)
EBSCOhost	1/1	~	~	~	1	(0)
IEEE	2/5	~	~	1/5	1	(3)
ProQuest	4/17	~	~	1/17	3	(3)
Web of Science	3/6	~	~	1/6	2	(4)
Wiley Library	1/11	~	~	3/11	4	(4)
Google Scholar	~	26/397	~	22/397	39	(9)
online	~	~	10	2	12	~
Total included	**7**	**20**	**10**	**26**	**63**	**(24)**

3. Findings

The clustering of research topics into emergent research fields was conducted after reviewing the focus of the paper and the frameworks used to embed ESM. With our inductive approach we merged the categories and sub-categories until no further thematical compression was feasible. Finally, three research fields emerged: ESM related to IT architecture thinking with overall 33 papers assigned to it, ESM related to IT organization thinking with 22 papers as well as 8 papers on ESM related to miscellaneous fields containing diverse perspectives not related to the two themes above, such as software engineering, marketing, or cloud computing.

3.1. Trends across a timeline

A trend becomes visible when cross tabulating the publication date with the field clustering of IT architecture, IT organization and miscellaneous (Figure 2). We observe that starting 2004, ESM was a reoccurring topic in the IT architecture field, however, after 2015 it started declining to the degree of no new publications after 2019. In the IT organization field, the timeline trend is reversed. While 2013-2015 only single papers were published, a rapid increase occurred between 2016 and 2021, with a peak of 6 publications in 2019. It is likely that in near future, the ESM topic will be mainly discussed through IT organization thinking. One possible explanation of the increased popularity of ESM as ITSM extension in recent years is the stronger publicity from the practitioner's community. According to Atlassian [1], "ESM […] was largely coined by leading analyst firm Forrester", which started to use this term since 2017 [14]. From this year on the publications in IT organization field boomed. At the same time, the relevance of ESM in IT organization field is rising due to the expanded toolset offering by a growing number of service providers [23, 25]. The miscellaneous field shows no clear trend, with single publications across a broad timespan between 1999 and 2019.

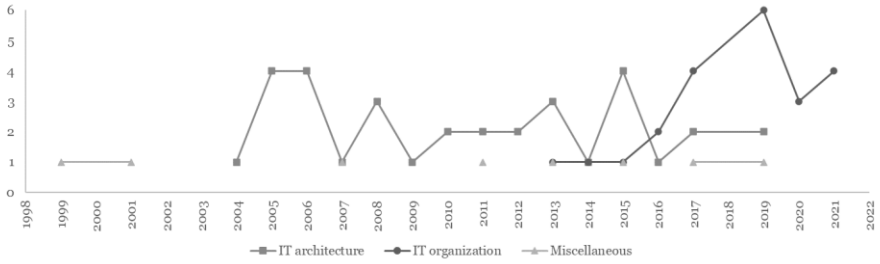

Figure 2: Trend of ESM publications across timeline [author's illustration]

In sum, to address the first part of the research question we conclude that the existing knowledge on ESM is present mainly in two fields, IT architecture or IT organization thinking. This gives the term ESM a context and framework embedment, which we will analyze deeper in the next section. We have further found a timeline trend visible within the fields, and we can expect future research on ESM to be embedded rather in the IT organization field.

3.2. Characteristics of ESM per research field

In this section, we summarize the ESM knowledge per research field by presenting the ESM characteristics in IT architecture and IT organization thinking. First, we provide a deeper understanding of the definition of ESM and of enterprise services. Next, we describe ESM along structural, design, and technological attributes, which emerged from the literature review. The result is a comparison of ESM thinking per field along these characteristics (Table 3), which helps establish concept clarity by categorization and differentiation. Note, that for this detailed analysis, we considered papers only from 1st, 2nd, and 3rd search phase, as in the 4th phase descriptive elements of ESM were missing. This section is divided into five sub-sections dealing with the five characteristics of ESM per research field.

3.2.1. Definition of ESM

This sub-section describes how ESM is understood per research field, by showing common definition denominators and examples, including the main frameworks referring to ESM in IT architecture thinking.

IT organization thinking. The basis of the definition in IT organization thinking is that ESM is a strategic approach derived from ITSM [16, 24, 33]. As an extension of ITSM, ESM applies its best practices, technologies, and processes towards non-IT areas of the organization [4, 10, 29]. When specifying ITSM, almost all authors reference the de-facto standard ITIL, few mention other frameworks like COBIT, Microsoft Operations Framework (MOF) or ISO 2000/9000 [12, 15, 22]. Two authors suggest that ESM could also be defined broader, i.e., equivalent to an intra-organizational digital transformation or digitalization of process workflows [12, 33]. Use cases for ESM are found in following business areas: Human Resources (HR), Workplace, Procurement, Finance and Controlling, Facility Management and Maintenance, Fleet Management, Supplier Management or Customer Service [4, 18, 22].

The overarching goal of ESM is to deliver customer satisfaction, increase process efficiency and service quality [13, 24, 29]. This includes three activities in particular: simplification, standardization, and automation [10, 12]. A basis for ESM is to view the employee as a customer. The employee-customer expectations of comfort, quality, and user-friendliness from personal online experience (e-commerce or e-banking services) are transferred to the work environment [18, 25, 33].

IT architecture thinking. In the IT architecture field, ESM manages all issues related to an end-to-end service lifecycle. This covers the service from its creation and request update to the deployment, usage, and retirement [19]. “It includes: service exception, fault monitoring and reporting, service performance monitoring and reporting, SLA [Service Level Agreement] compliance and metrics collection monitoring, as well as service policy performance monitoring and metrics monitoring, etc.” [42, p.2]. Chang [7] adds regulations and governance functionalities to the list of activities. Two other authors emphasize the connection between ESM and Service-Oriented Architecture (SOA), inasmuch as ESM is the foundation for SOA runtime governance [41] and that it is a necessary element for service quality in an enterprise [36]. In IT architecture, ESM is strongly determined by established frameworks Network-Centric Enterprise Services (NCES) and SWIM, which shall be briefly described in the following:

The NCES (Network-Centric Enterprise Services) framework follows guiding principles written down in the US Department of Defense Architecture Framework (DoDAF) [7]. Within NCES, ESM is a set of system management functionalities to warrant end-to-end service quality [7]. An example of network centric environments is warfare, where defense systems interact between the control center, ground support and the weapon system itself [28]. SWIM (System Wide Information Management) is a framework facilitating information sharing between aeronautical systems. Within SWIM, the ESM capability, as a service governance capability, enables active and passive management of services [27]. ESM fulfills five core functions for SWIM services: asset, configuration, event & performance, policy management as well as service desk support [5, 21]. A classic example of SWIM usage are flight operations, where data is shared real-time on flight flows, aeronautical details, meteorological data, and controller-pilot exchange [42].

In sum, in both fields ESM’s goal is the improvement of service quality and process efficiency. To achieve the goal, the components of an organization are defined as services. Both follow the idea of workflows, either as process steps or as a lifecycle management. However, a main difference lies with the service orientation. While in IT organization thinking, the understanding of ESM is strongly customer-centric with a focus on employee-customers and internal business processes, in IT architecture the view is rather system-centric, aiming at the operational management of system services.

3.2.2. Service characteristics of ESM

This sub-section describes how the term service or enterprise services is understood in ESM context per research field, including exemplary use cases.

IT organization thinking. In most papers an enterprise service is viewed as a business request [16, 17, 22]. Exemplary, among core ESM services in public administration are requests like mail processing, ordering office supplies or notifying about a defect [10]. Others define enterprise services either rather similar to IT services [9] or more general as services which can be requested from a corporate service catalogue [34]. Enterprise services are exchanged between companies, customers, and suppliers [37], therefore, users of the services can be likewise internal or external customers [13, 33, 34].

At their core, ESM flows are ultimately request fulfillments. "The day-to-day work of many employees in an organization can be seen through the lenses of receiving requests from internal or external customers and going through the motions of fulfilling them" [23, p.89]. ESM benefits business areas with a high volume of demands with similar patterns [33]. These activities include requests for help, for information or change, and overall reflect established ITSM operations processes [29]. A good use case to apply ESM is the repetitive workflow of employee onboarding. HR provides employee data and issues IDs, controlling saves account and tax information, IT sets up the digital workplace (E-Mail, software), a maintenance team provides a physical workplace (desk, chair) while facility management gives out building access cards [17].

IT architecture thinking. On a high level, service is the application of operant resources for the benefit of another actor [15]. Or, in SOA concept terms, service is viewed as operational functions of a software system to fulfill business objectives [27]. From a software architecture perspective, services should be independent but loosely coupled and reusable [27]. Enterprise services can take the form of business or IT services [19]. Both types are seen as decompositions of enterprise activities with defined offerings, standard interfaces and flexible modularity [19, 41]. Huang et al. [19] depicts enterprise services with the example of a business transaction workflow, in which all intermediate activities are implemented as services. To conduct business transactions, e.g., like sending a purchase order from the trading partner to the internal backend system, a workflow is created, causing different services to be executed by internal and external parties. ESM's role is to manage, monitor and if needed problem-solve such end-to-end service workflows.

In sum, the understanding of enterprise services is similar in the two research fields due to its broad definition. Enterprise services could be either business or IT related and directed towards either internal or external customers. However, in the IT organization thinking the services resemble a business requests fulfilment while in IT architecture thinking they are more software functions for business objectives.

3.2.3. Structural characteristics of ESM

Structural characteristics refer to the understanding of how ESM is structured or set up in organizations per research field, including its challenges and facilitators.

IT organization thinking. Structurally, the main objective of ESM is to provide an end-to-end service provisioning [33]. An organization's setup defines each "functional area of an organization that provides internal services […] as a service domain" [17, p.6]. Another structural characteristic is a proper communication channel. Many authors [10, 12, 29] call for a single point of contact for customer inquiries, an enterprise service point. Beyond this point, it is valid to have multiple functional units in the backend, per each service area [24, 30]. The highest form of ESM communication channel, and simultaneously a strong ESM enabler is a central self-service desk [17, 30]. One obstacle for successful internal service delivery is the silos mentality within an organization [33, 37]. ESM can act as an approach for organizational transformation, which requires proper Change Management for cultural change [33]. Acceptance for change must be created among staff, management and even external suppliers for IT outsourcing [18, 33, 37].

IT architecture thinking. In IT architecture thinking, the structure of an enterprise is determined by its design characteristics. Huang et al. [19] refers to the term Service Oriented Enterprise. From a system perspective it is a model for architecting business process-driven enterprises. From a business perspective, the term emphasizes the componentization of business functions into services. This component-service idea is the basic structure for ESM organizations, however, it bears its own challenges by creating an environment with numerous services and heterogeneous ownerships [41]. In

such diverse environments, interrelationships between the system components or capabilities are crucial [15, 36].

In sum, in both fields the structural characteristic of ESM is an open, inclusive but interconnected environment. This is needed to achieve a strong service-orientation of the enterprise. In IT organization thinking the emphasis is however more on soft skills like communication means and change management, while IT architecture's structural characteristics are determined by its system architecture.

3.2.4. Design characteristics of ESM

Design characteristics refer to the understanding of how ESM is implemented or architected in organizations per research field, including its necessary and supportive system elements.

IT organization thinking. Overall, the purpose of a system design is to describe the various functional elements of an organization and their interdependencies [9, 12]. Zhang [43] uses an attribute analysis model to determine the appropriate system modules for building ESM. Interfaces and integration should be considered on a processual level, as the integration of the service desk into the process landscape [10], as well as on the application level, connecting software into the system [13]. What remains important is that services are designed standardized and modular [37], so that problematic customizing of software is avoided [29]. Some design considerations involve particular providers, for example Platform as a Service (PaaS) solutions or the ServiceNow vendor [4, 23].

IT architecture thinking. The predominant concept for designing ESM-related environments is SOA, whose basic idea is the partitioning of functionality into reusable and independent yet loosely coupled services [5, 36]. Some authors underline the importance of horizontal and vertical interoperability of enterprise systems comprised of IT artifacts, people, and business practices [7, 19]. For ESM in particular, Chen et al. [8] developed a four-layer architecture. ESM has a single portal frontend (layer 4), behind which lies the service management layer with all the service functions (layer 3). The information flows to the data integration layer (layer 2) which lastly connects to the client infrastructure (layer 1) [8]. Each layer itself is broken down into components, linkages, sub-components and relationships.

In sum, in both research fields ESM is embedded in an architecture characterized by a modular design of the enterprise services. The enterprise functionality is partitioned into components which are independent but simultaneously integrated with each other. In IT organization thinking, it further includes modularity of the organizational setup. While in the IT architecture thinking the design basis is strongly laid by existing frameworks which reference ESM, in IT organization thinking the design ideas are not formed into a wholesome framework, yet.

3.2.5. Technology characteristics of ESM

Technological characteristics refer to the understanding of how various technologies or tools facilitate the implementation of ESM per research field, including the relation between IT and business functions.

IT organization thinking. The IT function is seen as the driver and enabler of an ESM implementation mainly because digitalization and service desk setup often fall under its responsibilities [17, 25]. Moreover, the IT department typically holds the knowledge on service-processes and service culture, through a long-standing experience with ITSM and affiliated frameworks [12, 22, 29]. ESM is about more than just usage of a common ITSM tool, but a proper toolset can influence ESM's success [33]. Many software or service providers have expanded their ITSM offering to include ESM tools and therefore facilitate the transition [23, 25]. Beside the tools, technological advances like artificial intelligence (AI), automation, data analytics or machine learning (ML) could improve the organization's ESM efforts [30, 43]. Example use cases of ML include an automated ticket routing and question-answer chat bots [13].

IT architecture thinking. Regarding technological considerations, the main takeaway from an IT architecture thinking standpoint is that any proposed enterprise architecture is designed independent from technology and tool choices. Yet, the technological decisions influence the architectural transition, therefore it is recommended to choose open standard technologies or commercial tools [36, 41].

Wisnosky et al. [41] conducted a market research on SOA ESM vendors among 30 organizations, concluding that there are several commercial tools on the market which offer strong toolsets for integrated service management, some even featuring business management aspects [41]. The multiple providers and offerings available for service management require an individual assessment of feasibility in the organization [8,15].

In sum, in both research fields technological considerations, including tools which support and standardize service management, could facilitate the implementation or development of ESM. However, ESM is technology agnostic in that it does not require any specific tools to function. In IT organization thinking, the knowledge of the IT department is emphasized, while in IT architecture thinking the focus is on open standard technologies. Table 3 summarizes the key points on ESM between IT organization and IT architecture thinking across the five characteristics along with practical examples and existing reference frameworks.

Table 3
Main characteristics of ESM in IT organization and IT architecture thinking

Enterprise Service Management		
Characteristics	**IT organization thinking**	**IT architecture thinking**
Definition of ESM [see 3.2.1]	▪ ESM is based on ITSM ▪ ESM as a strategic approach for organizational business processes ▪ ESM is customer & process-centric ▪ Goal is efficiency	▪ ESM as management of an end-to-end service lifecycle ▪ ESM is system-centric ▪ ESM is connected to SOA as it ensures its service quality
Understanding of enterprise services [see 3.2.2]	▪ Services as business requests ▪ Internal workflows resemble request fulfillment	▪ Services as resources or functions of a SOA system ▪ Services can be business- or IT-related
Organizational structure [see 3.2.3]	▪ Open and inclusive structure without silos ▪ Single point of contact for customers ▪ ESM used for organizational transformation or change	▪ Service Oriented Enterprise with business functions as services ▪ Strong interdependence within service-based workflows
Architectural design [see 3.2.4]	▪ Modularity of services (standardization instead of customization) ▪ Design of processes and interfaces to support structural setup	▪ Design is based on SOA principles (partitioning of functionality into reusable and independent components) ▪ System interoperability between services
Technology and tools [see 3.2.5]	▪ IT as driver and enabler of ESM change ▪ Expanded ITSM-tools are offerings which facilitate ESM ▪ Useful technological advances like ML or AI	▪ Technology independent enterprise architecture and ESM design ▪ Usable open standards technologies and commercial tools available for service management
Examples of ESM [see 3.2.2]	▪ Business areas for ESM: HR, Procurement, Controlling, Fleet or Facility Management ▪ Workflow examples: HR onboarding follows a repetitive set of activities ▪ Use of technology: automated ticketing routing, Q&A algorithm	▪ Use of frameworks with ESM for global aviation management or defense and weapon systems ▪ ESM monitors and manages service workflows like business transactions ▪ Chen's four-layered ESM architecture
Frameworks [see 3.2.1]	▪ Universally: ITIL ▪ Other frameworks: COBIT, MOF ▪ Standards: ISO 9000/9001, ISO/IEC 20000	▪ SWIM ▪ NCES ▪ SOA ▪ DoDAF

4. Discussion and Outlook

Our analysis of ESM across the two main research fields has confirmed our anticipation that the term ESM is blurry. This blurriness on the one hand leads to the application of the term ESM in many different discussions, yet it also results in the lack of a common understanding in the existing literature. According to Suddaby, a lack of construct clarity is among the most common reasons to reject presented research [35]. We tried to synthesize existing knowledge on ESM to strengthen concept clarity of the term ESM.

The main characteristics of ESM in both the IT organization and IT architecture thinking shed light on five important aspects of concept clarity. To recall, the four elements contributing to construct clarity are a precise definition, contextual scope conditions, a semantic relationship with other constructs and logical consistency of the construct [35]. First, we discovered that there is no universal definition of ESM, but at least a dual, field-specific understanding. Additionally, in the IT organization thinking we observe a narrow and broad ESM meaning. However, for concept clarity purposes it cannot be recommended to use ESM as equivalent to digital transformation (the broad definition), since this term already exists and has its own conceptual meaning.

Second, our research contribution should go further than providing a field-specific ESM understanding. Based on our review of the structural, design and technological characteristics of the concept, we propose the following definition as a common ground for ESM across research fields: *ESM is an approach which aims at transforming and managing organizational workflows as services, which can be used by internal or external customers to fulfill business or IT requests. ESM is created as an interplay of an open yet interconnected enterprise organization (service-orientation), a component-based architecture of services (modularization) and support of technology independent standardization tools (technology agnosticism).* This definition fits well in the overall service science logic, where a service-oriented organization is set up of three layers which support business execution—business processes (incl. ITIL elements), a mid-level architecture layer (including as a service offerings) and the infrastructure layer (including SOA elements) [3].

Third, we argue that our differentiation per research field helps sharpen the definition specifics of ESM and provides context conditions in which the concept meanings are created (Table 3). For instance, in the IT organization thinking, ESM is stronger customer-oriented and process-centric while in the IT architecture thinking it is more system-centric. The transparency of this context conditions should support researchers to determine their field-specific ESM understanding.

Fourth, our literature review revealed the relationships between ESM and other concepts. Here, we see also a difference per field, on the one hand a link between ESM and ITSM, ITIL and business request fulfillment (IT organization thinking), on the other hand a linkage between ESM and SOA, SWIM and NCES (IT architecture thinking). Fifth and last, we believe ESM as a concept demonstrates logical coherence as its various attributes and relationships are adequately incorporated into it. However, since the coherence assessment is rather intuitive and in large part gained by embedding the construct into theory [35], this part of construct clarity evaluation must be conducted on the individual level of each research paper.

With our literature review, we aim to contribute to the evolution of both the IT organization and IT architecture fields by transforming ESM towards a recognized academic concept and providing more clarity and context transparency for ESM. Yet, we acknowledge that there have been critical voices on ESM. It was called a ‘buzzword’ or ‘marketing hype’ pushed by software vendors to increase their service management platform sales [23, 29]. This view was strengthened considering that the concept has been confused with other existing concepts like ITSM [9, 13]. Moreover, during our research we found alternative labels of ESM in literature, like ‘Business Service Management’ or ‘Beyond IT’ [12, 17]. However, Mitrakis [29] argues that even though the concept names may vary or be new, the whole idea behind ESM has been used in practice for years and is useful because ESM value can be measured by more efficient and effective services.

We see several opportunities for further research on ESM. A next step towards improved conceptualization of ESM should be the development of a scientifically grounded ESM framework. To further develop ESM from a concept with a unified definition towards a recognized research construct, the ESM concept requires operationalization and measurement metrics. An ESM measurement instrument could allow for more in-depth empirical case studies. The high number of review papers affiliated with the 4th search phase (in which ESM was only mentioned as a sidenote) shows that many papers reference ESM as part of other frameworks (e.g., SWIM, NCES), but rarely break it down to its unique components. In a future work, we therefore aim to empirically develop and test a measurable ESM construct in an implementation context.

Lastly, ESM could benefit from theorization through appropriate lenses. We regard two theories as particularly applicable for ESM. First, the service-dominant logic (S-DL) [38] could shed light on the interaction between IT and business departments in an ESM-adapted organization. Based on 11 foundational premises, the S-DL framework explains that the basis of all exchange is service (not

goods), and value is always co-created with the beneficiary [38]. The value in internal IT service relationships is IS effectiveness, including business satisfaction or service quality [40]. In S-DL, knowledge is an operant resource used for value co-creation, and in the ESM case the IT department is seen as a knowledge driver for ESM transformation [17, 25]. S-DL could deliver valuable insights analyzing how ESM is created in a value co-creation process between the IT and business departments.

Second, an institutional isomorphism lens could identify and classify the motivations behind ESM adoption. Institutional isomorphism refers to an imitation process in which an organization or a department start to resemble other units in the same conditional environment [11]. Isomorphism can take three forms: coercive isomorphism (pressure from government policies, customers, IT vendors); mimetic pressure (modelling innovation drivers or industry leaders); normative isomorphism (imitation from trainings, certifications, occupational groups) [11, 20]. For ESM, coercive pressure could stem from employee-customers who expect the same service satisfaction in their business environment as in their private environment. Moreover, 20% of large companies get inspired by customers, competitors, or their service providers when it comes to service process design or improvement [22]. In the IT architecture field, the proliferation of established frameworks (NCES, SWIM) might be caused by coercive pressure from governments or international aviation organizations. Future research on institutional isomorphism in ESM could explain why and from whom organizations imitate ESM. Those insights could in turn reveal patterns in ESM adaptation methods and principles.

The following limitations of this research merit consideration. First, the selection criteria generated a particular set of review findings. Second, the inclusion of non-peer-reviewed literature may have created biases due to the authors' affiliations with particular companies. Acknowledging the limitations of this research, future authors may consider modified search parameters or alternative focal perspectives.

5. Conclusion

In this systematic literature review, we addressed the missing concept clarity of Enterprise Service Management (ESM). We first determined that the phenomenon occurs in two main research fields: IT organization and IT architecture. We further identified a timeline trend, with IT architecture-based ESM references being in decline, while the IT organization-grounded ESM term is starting to trend. This suggests a shift in ESM meaning. Furthermore, we provided an in-depth analysis of the main characteristics of ESM in the two main research fields (Table 3). This summary of knowledge lays the foundation for a clearer concept definition of ESM and demarcation against other phenomena such as ITSM or digital transformation. Finally, based on the findings we proposed a unifying cross-field definition of ESM. We tried to rectify the arguments of concept blurriness by offering a common ESM definition and characteristics set, with the aim to transform ESM towards a recognized scientific concept with possible theoretical lenses. We hope that this paper contributes to sharing existing ESM knowledge across fields and thereby stimulates increased future academic research on ESM.

6. References

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